

## Width Upgrade for a Scalable Switching Network

**Abstract:** A redundant multistage network can be expanded by width in a non-stop manner, involving an insertion, a reconfiguring and an activation section. The insertion section involves adding a router to each row of routers in a position dictated by the specific upgrade procedure. The reconfiguring section involves the selection of a port and disconnecting any connections necessary to connect that port with its proper corresponding port as derived from the final desired topology. This section can further include the optional permutation of port address to minimize traffic disruption. The activation section involves attaching any new external ports desired to external sources and putting those new connections into service.